

REMARKS

Claims 1-9 are pending in the present application.

Claims 1-9 have been rejected.

No claims have been allowed.

Claims 1-9 have been amended.

Claims 10-20 have been added.

Claims 1-20 remain in the specification

Reconsideration of the claims is respectfully requested.

Specification

The Applicants have amended the specification to correct typographical errors. The Applicants have also amended the Abstract to replace the expression "5 lumen" with the expression "five lumens" and to place the Abstract in the form of a single paragraph. No new matter has been added as a result of these amendments.

35 U.S.C. § 102 (Anticipation)

In Paragraph 3 on Pages 2-3 of the December 17, 2002 Office Action the Examiner rejected Claim 1-9 under 35 U.S.C. § 102(b) as being anticipated by International Patent Application No. WO 97 / 01240 to *Stevens et al.* (hereafter "*Stevens*"). The Applicants respectfully traverse these rejections.

A prior art reference anticipates the claimed invention under 35 U.S.C. § 102 only if every element of a claimed invention is identically shown in that single reference, arranged as they are in the claims. MPEP § 2131; *In re Bond*, 910 F.2d 831, 832, 15 U.S.P.Q.2d 1566, 1567 (Fed. Cir.

1990). Anticipation is only shown where each and every limitation of the claimed invention is found in a single prior art reference. MPEP § 2131; *In re Donohue*, 766 F.2d 531, 534, 226 U.S.P.Q. 619, 621 (Fed. Cir. 1985).

Claim Amendments

In order to more particularly claim their invention the Applicants have amended Claim 1 as follows:

1. [Amended] An assembly comprising:
a display device provided with a pattern of pixels (3) driven by a control circuit (8),
and an illumination system for illuminating the display device,
said illumination system comprising a light-emitting panel (11) and at least one light source (16, 16', 16'', . . .), said light source (16, 16', 16'', ...) being associated with the light-emitting panel (11), at least three sets of light-emitting diodes (16, 16', 16'', ...) wherein each set of light-emitting diodes has a different light-emission wavelength, and
the control circuit (8) also drives the luminous fluxes of the light-emitting diodes (16, 16', 16'', ...) in dependence upon an image to be displayed by the display device. (Underscore added for emphasis).

The Applicants respectfully submit that amended Claim 1 is not anticipated by the *Stevens* reference. The Applicants respectfully submit that *Stevens* does not show the unique and novel elements of the Applicants' invention arranged as they are in amended Claim 1. The Applicants have also amended Claims 2-9 in order to more particularly claim the Applicants' invention. Dependent Claims 2-9 depend directly or indirectly on Claim 1. Claims 2-9 therefore contain the unique and novel elements of Claim 1. Therefore, the rejection of Claims 1-9 under 35 U.S.C. § 102 (b) has been overcome.

New Claims

The Applicants have submitted new Claims 10-20. The Applicants respectfully submit that Claims 10-20 contain patentable subject matter and are now in condition for allowance.

Allowance of Claims

For all of the foregoing reasons, the Applicants respectfully request that amended Claims 1-9 and new Claims 10-20 be passed to allowance.

The Applicants' attorney has made the amendments herein and the arguments set forth above in order to place this Application in condition for allowance. In the alternative, the Applicants' attorney is making the same to properly frame the issues for appeal. In this Amendment, the Applicants make no admission concerning any now moot rejection or objection, and affirmatively deny any position, statement or averment of the Examiner that was not specifically addressed herein.

SUMMARY

If any issues arise, or if the Examiner has any suggestions for expediting allowance of this Application, the Applicants respectfully invite the Examiner to contact the undersigned at the telephone number indicated below or at wmunck@davismunck.com.

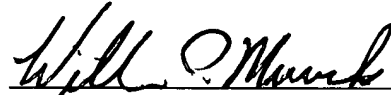
The Commissioner is hereby authorized to charge any additional fees connected with this communication or credit any overpayment to Deposit Account No. 50-0208.

Respectfully submitted,

DAVIS MUNCK, P.C.

Date:

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APPENDIX A
VERSION WITH MARKINGS TO SHOW CHANGES MADE
IN THE SPECIFICATION

Page 1, Lines 1-7, has been amended as follows:

The invention relates to an assembly comprising [-] a display device provided with a pattern of pixels driven by a control circuit[, -] and an illumination system for illuminating the display device, [- said] in which the illumination system [comprising] comprises a light-emitting panel and at least one light source, [said] and in which the light source [being] is associated with the light-emitting panel. The invention further relates to a display device for use in [said] the assembly. The invention also relates to an illumination system for use in [said] the assembly.

Page 2, Lines 23-25, has been amended as follows:

It is an object of the invention to completely or partly overcome [said] the above mentioned drawback. The invention more particularly aims at providing an assembly of the type mentioned in the opening paragraph, wherein the contrast of the display device is improved.

Page 6, Lines 18-32, has been amended as follows:

The illumination system which is very diagrammatically shown in Fig. 1 comprises a plurality of light-emitting diodes (LEDs) 16, 16', 16'', ... having different light-emission wavelengths. The LEDs 16, 16', 16'', ... are driven by the control circuit 8 via amplifiers 25, 25', 25''. In accordance with the measure of the invention, the control circuit 8 drives the display device and the luminous fluxes of the LEDs in dependence upon an image to be displayed by the display device. In the example shown in Fig. 1, reference numeral 16 corresponds to a plurality of red LEDs, reference numeral 16' corresponds to a plurality of green LEDs, and reference numeral 16'' corresponds to a plurality of blue LEDs. Preferably, the LEDs are arranged in a (linear) array of alternately red, green and blue LEDs. In the example shown in Fig. 1, the control circuit 8 drives the LEDs 16, [16''] 16', 16'' on a color-to-color basis. In an alternative embodiment, the control circuit drives each one of the LEDs individually. An advantage of individually driving each one of the LEDs is that, for example in the case of failure of one of the LEDs, appropriate measures can be taken in the illumination system to compensate for the effect of this failure, for example by increasing the luminous fluxes of nearby LEDs of a corresponding color.

Page 12, Lines 1-15, have been amended as follows:

Fig. 3B diagrammatically shows a block diagram of the driver interface DI between the display device and the illumination system (detail of Fig. 3A). The driver interface DI transports a number of signals, for example a synchronization signal (a) and information about the desired light levels of the various colors, for example of the red (b), green (c) and blue (d) light. The LCD driver 108 may additionally, or instead of the information about the desired light levels of the various colors, send the desired color point (e) to the LED driver 108' via the driver interface DI. Also the

LED driver 108' can send a signal [(7)] (f) to the LCD driver 108 via the driver interface DI, for example information about the maximally permissible value of the luminous fluxes through the LEDs. This may be important in the situation wherein a "punch" or "boost" of a certain color is brought about on the display device 134 by the LCD driver 108 for a certain period of time. The LED driver 108' is capable of feeding back information as to which luminous flux is still permissible for the relevant LED or LEDs, thereby precluding that the temperature of the relevant LED or LEDs becomes too high. In the example shown in Fig. 3B, both the LCD driver 108 and the LED driver 108' also comprise a controller 107, 107', respectively, for processing the signals.

The Abstract on Page 12 has been amended to read as follows:

The system comprises a display device with a pattern of pixels (3) controlled by a control circuit (8) and a backlight system for illuminating the display device, which backlight system comprises a light-emitting panel and a light source (16, 16', 16'', ...) associated with the light-emitting panel. The light source comprises a plurality of light-emitting diodes (LEDs) of at least two different colors. The control circuit (8) also controls the luminous flux of the LEDs. Preferably, the intensity of the light emitted by the LEDs (16, 16', 16'', ...) varies with the light level of the image to be displayed by the display device. Preferably, the intensity of the light emitted by the backlight system can be controlled on a frame-to-frame basis and, preferably, also for each color. Preferably, the LEDs comprise a plurality of red, green, blue (and amber) LEDs, each, preferably, having a luminous flux of at least [5 lumen] five lumens. The color point of an image to be displayed on the display screen of the display device is set by the backlight system, enabling an optimum contrast to be obtained for the image to be displayed by the display device.

[Fig. 1]

IN THE CLAIMS

The first line on Page 10 has been amended as follows:

[CLAIMS:] WHAT IS CLAIMED IS:

Claims 1-9 have been amended as follows:

1. [Amended] An assembly comprising:
[-] a display device provided with a pattern of pixels (3) driven by a control circuit (8),
[-] and an illumination system for illuminating the display device,
[-] said illumination system comprising a light-emitting panel (11) and at least one light source (16, 16', 16'', ...), said light source (16, 16', 16'', ...) being associated with the light-emitting panel (11), [characterized in that] wherein
[-] the light source comprises at least [two] three sets of light-emitting diodes (16, 16', 16'', ...) [having] wherein each set of light-emitting diodes has a different light-emission [wavelengths] wavelength, and
[-] the control circuit (8) also drives the luminous fluxes of the light-emitting diodes (16, 16', 16'', ...) in dependence upon an image to be displayed by the display device.
2. [Amended] An assembly as claimed in claim 1, [characterized in that] wherein the control circuit (8) varies the intensities of the light emitted by each set of the light-emitting diodes (16, 16', 16'', ...) in response to the illumination level of the image to be displayed by the display device.
3. [Amended] An assembly as claimed in claim 1 [or 2], [characterized in that] wherein the intensities of the light emitted by each set of the light-emitting diodes (16, 16', 16'', ...) can be adjusted on a frame-to-frame basis.
4. [Amended] An assembly as claimed in claim 1 [or 2], [characterized in that] wherein the intensities of the light emitted by each set of the light-emitting diodes (16, 16', 16'', ...) can be adjusted for each color on a frame-to-frame basis.
5. [Amended] An assembly as claimed in claim 1 [or 2], [characterized in that] wherein the light source comprises at least [three] four sets of light-emitting diodes (16, 16', 16'', ...) [having] wherein each set of light-emitting diodes has a different light-emission [wavelengths] wavelength.
6. [Amended] An illumination system as claimed in claim 1 [or 2], [characterized in that] wherein each diode in each set of the light-emitting diodes (16, 16', 16'', ...) comprises a luminous flux of at least five lumens (5 lm).
7. [Amended] An illumination system as claimed in claim 6, [characterized in that] wherein each set of the light-emitting diodes (16, 16', 16'', ...) are mounted on a printed circuit board.

8. [Amended] A display device for use in an assembly as claimed in claim 1 [or 2].
9. [Amended] An illumination system for use in an assembly as claimed in claim 1 [or 2].

Claims 10-20 have been added:

10. [New] An assembly as claimed in claim 1, wherein a first set of light-emitting diodes (16) has a red light-emission wavelength, and a second set of light-emitting diodes (16') has a green light-emission wavelength, and a third set of light-emitting diodes (16'') has a blue light-emission wavelength.

11. [New] An assembly as claimed in claim 2, wherein a first set of light-emitting diodes (16) has a red light-emission wavelength, and a second set of light-emitting diodes (16') has a green light-emission wavelength, and a third set of light-emitting diodes (16'') has a blue light-emission wavelength.

12. [New] An assembly as claimed in claim 2, wherein the intensities of light emitted by each set of the light-emitting diodes (16, 16', 16'', ...) can be adjusted on a frame-to-frame basis.

13. [New] An assembly as claimed in claim 2, wherein the intensities of light emitted by each set of the light-emitting diodes (16, 16', 16'', ...) can be adjusted for each color on a frame-to-frame basis.

14. [New] An assembly as claimed in claim 5, wherein a first set of light-emitting diodes (16) has a red light-emission wavelength, and a second set of light-emitting diodes (16') has a green light-emission wavelength, and a third set of light-emitting diodes (16'') has a blue light-emission wavelength, and a fourth set of light-emitting diodes (16''') has an amber light-emission wavelength.

15. [New] An illumination system as claimed in claim 2, wherein each diode in each set of the light-emitting diodes (16, 16', 16'', ...) comprises a luminous flux of at least five lumens (5 lm).

16. [New] An illumination system as claimed in claim 15, wherein each set of the light-emitting diodes (16, 16', 16'', ...) are mounted on a printed circuit board.

17. [New] A display device for use in an assembly as claimed in claim 2.

18. [New] A display device as claimed in claim 17 wherein the light source comprises at least four sets of light-emitting diodes (16, 16', 16'', ...) wherein each set of light-emitting diodes has a different light-emission wavelength.

19. [New] An illumination system for use in an assembly as claimed in claim 2.

20. [New] A display device as claimed in claim 19 wherein the light source comprises at least four sets of light-emitting diodes (16, 16', 16'', ...) wherein each set of light-emitting diodes has a different light-emission wavelength.